

Claims

1. Regulating device (1) for control of liquid flow and/or pressure, including a housing (3) having an axis and a circumferential extension, and being provided with an inlet and an outlet (12) and enclosing an inner member (2) which is arranged to be movable by means of an actuator relative to the housing and provides a passage for regulated liquid flow, **characterised in**
 - that the inlet comprises at least one group of at least two substantially radial ports (4,5,6,7) which are spaced apart with a circumferentially equal distance, and
 - that the passage comprises a number of radial apertures (8,9,10,11), each positioned correspondingly with respect to each port,
 - that the inner member is fitted with a minor radial play inside the housing so that in operation a minor leakage of the liquid to be regulated will enter a slit between the inner member and the housing, whereby the inner member (2) is substantially relieved from radial forces in operation.
2. Regulating device according to claim 1, **characterised in** that the outer surface of the inner member (2) and the inner surface of the housing (3) have circular cross-section.
3. Regulating device according to claim 1 or 2, **characterised in** that the inner member (2) is provided with an axial outlet (12).
4. Regulating device according to any of the claims 1-3, **characterised in** that the ports (4,5,6,7) and the apertures (8,9,10,11) are arranged to be brought in and out of correspondence with each other by rotational

and/or axial movement of the inner member with respect to the housing.

5. Regulating device according to any of the claims 1-4,
characterised in that as an actuator (15) for the inner
 5 member (2) is chosen one of: a stepping motor, a servo
 motor.
6. Regulating device according to any of the claims 1-5,
characterised in that the ports (5') and the apertures
 (6') have a shape resulting in a substantially constant
 10 relative change in opening areas from a setting position
 to an adjacent setting position such that, for at least a
 portion of the respective ports and the apertures, the
 opening area for liquid flow path is expressed as: (1)

$$\frac{dA}{A} = C$$
 , where C is a constant, A is the area passing
 15 flow and dA is the area change.
7. Regulating device according to any of the claims 1-6,
characterised in that the inner member (2) is
 substantially shaped as a circular cylinder.
8. Regulating device according to any of the claims 1-7,
 20 **characterised in** that a sealing is provided between the
 inner member and the housing.
9. Regulating device according to any of the previous
 claims, **characterised in** that an equalising chamber (20)
 is positioned upstream the ports.
- 25 10. Regulating device according to claim 9, **characterised in**
 that the equalising chamber (20) surrounds the housing
 (3) in the region of the ports.

11. Device for dynamometer testing of motor vehicles,
comprising a dynamometer having a hydrostatic pump
assembly provided with means for measuring the torque
applied to a pump input shaft, characterised in that it
includes a regulating device according to any of the
claims 1-10 for controlling the pump.

12. Arrangement for controlling liquid flow or pressure
including at least one regulating device according to any
one of the claims 1 - 10, wherein the arrangement is one
of the group: a device for control of hydraulic fluid, a
retarder for a motor vehicle, a speed control device for
hydraulically powered vehicles, a flow regulator for a
hydro power generator, a device for thermostatic control
of liquid carrying heat and cooling systems in buildings,
industries, laboratories and district heating systems, a
device for control of wave generating systems, a fountain
device.